

SALIX FLORIDANA CHAPMAN, A VALID SPECIES

CARLETON R. BALL

With one plate

THE purpose of this paper is to bring together the synonymy of *Salix floridana* Chapman and to discuss the various treatments of this species. An amplified description, based on all available collections, is given.

Salix floridana Chapman, Flora Southern U. S. 430. 1860.

Salix Chapmani Small, Man. Southeastern Flora 414. 1933.

Salix astatulana Murrill & Palmer in Jour. Arnold Arb. **22**: 580. 1941.

In 1860 Dr. A. W. Chapman of Alabama described "*Salix Floridana*, n. sp." (l. c., above), and he repeated the description without change on page 430 of Edition 2 (1883) and page 453 of Edition 3 (1897), as follows:

"**S. Floridana** n. sp. Leaves ovate-lanceolate, acute, smooth above, glaucous beneath, finely serrate, rounded at the base, the petioles pubescent; stipules small, caducous; fruiting ament oblong, dense; capsule ovate-lanceolate, smooth. — Rocky banks, West Florida, fruiting in April. — Shrub 8°–12° high. Leaves thin, 2'–3' long. Fruiting aments 2'–3' long, 1' in diameter, enveloped in the copious wool of the seeds. Flowers not seen."

The leaf description ("ovate-lanceolate, acute, . . . rounded at the base . . ."), taken with that of the glabrous capsules, indicates a willow unlike any other species known in the southern states. Apparently the species was not collected again in the 41 years from 1860 to 1900, inclusive.

With the twentieth century, there began a second and more confused 41-year period for *S. floridana*. In 1903, Small described it (Flora SE. U. S. 342; also ed. 2, 1913) much as Chapman had and credited it, for some reason, to middle as well as western Florida. Chapman, lacking staminate specimens, made no attempt to indicate relationships. Small keyed it as having two stamens and placed it next to *S. cordata*.

In 1902, Dr. Roland M. Harper collected his no. 1381 in Pulaski Co., Ga., and, in 1938, his no. 3634 in a "semi-calcareous swamp of small creek about ½ mile east of Cedar Springs, Early Co., Ga., April 11, 1938." Both numbers represent full-grown foliage and were distributed (usually 2 sheets of 1381) as *S. floridana*. The writer has seen these collections in each of five herbaria (Field Museum, Gray, Mo. Bot. Gard., N. Y. Bot. Gard., and U. S. Nat.). One sheet of 1381 carries vigorous shoots with enormous leaves, reaching a maximum size of 6 × 18 cm. Early in 1904, Dr. Harper published notes (Bull. Torrey Bot. Club **31**: 21–22. 1904) on his no. 1381, but he does not mention the larger leaves, lacking on Chapman's fruiting specimen.

"*Salix Floridana* Chapm. I refer tentatively to this almost unknown species specimens collected in wet woods at the outer (eastern) base of the

sand-hills of the Ocmulgee in Pulaski County below Hawkinsville, June 27 (*no.* 1381). My specimens were slender erect trees about ten feet tall and two inches in diameter, with tasteless bark roughish below and smooth above. The twigs were very brittle not only at the bases but throughout. No trace of fruit was found, but my material, as far as it goes, seems to be a perfect match for the type-specimen in the Torrey Herbarium, collected by Dr. Chapman in West Florida."

In 1913, Small published two more small volumes, *Shrubs of Florida* and *Florida Trees*. *Salix floridana* Chapman was described briefly in both (pages 9 and 13, respectively), and in the second Small adds: "... found in southern Georgia." He probably refers to Harper's collection in Pulaski County, which is just south of the center of the state.

Schneider, in January, 1918 (*Bot. Gaz.* 65: 21) lists *S. floridana* as a synonym of *S. longipes* Shuttleworth. In 1919, he says (*Jour. Arnold Arb.* 1: 25) that *S. longipes* "has been again described by Chapman (1860) as *S. floridana* and by Small (1913) as *S. amphibia*." He gives no reason for his conclusions and his annotation on the Torrey Herbarium isotype is dated 1919, after the above-cited papers were printed. Neither the Gray Herbarium isotype nor the Arnold Arboretum sheet of *Harper 1381* are annotated at all by Schneider.

In 1933, Small (*Man. SE. Flora* 414) described *S. Chapmanii* in essentially the same words previously used in describing *S. floridana*, and on p. 1504 he says: "Type, Middle Fla., Chapman, in herb. C(olumbia) U(niversity)." This specimen is the type of *S. floridana*. In this Manual, Small lists *S. floridana* as a synonym of *S. longipes*. He nowhere explains how the type of a synonymous species can be made the type of a later new species. Small placed his species in the *Cordatae*, with two stamens.

In 1941, Murrill and Palmer described and figured *Salix astatulana* sp. nov.,¹ discovered by Dr. Murrill in Lake and Levy Counties of Central Florida. The authors state that their species "appears to be most nearly related to *Salix longipes*" but is "a very different plant in its foliage," which is true also of *S. floridana* Chapman. The description of leaves, aments, and fruits closely parallels the description of *S. floridana* Chapman.

The writer borrowed the pistillate and staminate types from the Arnold Arboretum, and portions of the isotypes were generously contributed by Dr. Murrill, of the University of Florida. The types consist of several twig fragments plus detached mature leaves obviously from other plants or branches. The flowering specimens represent the juvenile stages of *S. floridana*, as the Chapman type and the Harper collections represent maturity.

The following amplified description is drawn up from all available authentic material, including two isotypes of *S. floridana* (and therefore of *S. Chapmanii*) from the New York Botanical Garden and the Gray Herbarium, *Harper 1381* and *3634* from the five herbaria named above, and the types of *S. astatulana* from the Arnold Arboretum and fragments

¹Murrill, William A., and Ernest J. Palmer. A New Willow from Florida. *Jour. Arnold Arb.* 22: 580-581. 1 fig. Oct., 1941.

of the isotypes from the University of Florida. The type specimen of *S. floridana* cannot be located at the Missouri Botanical Garden.

Shrub or small tree, 2–4 m. tall; branchlets brittle (Harper), the older yellowish brown or grayish brown and sparsely pubescent or glabrous, the younger dark brown to blackish (as dried) and more or less pubescent; bud-scales 2–5 mm. long, colored and clothed as the branchlets; stipules, on vigorous shoots, 5–10 mm. long, semilunate, glandular-serrulate. Leaves lanceolate, broadly lanceolate, or ovate-lanceolate, mostly 5–12 cm. long and 2–4 cm. wide, on puberulent or pubescent petioles 0.7–1.5 cm. long (not 4 cm. as indicated in text-figure of *S. astatulana*); the lowest leaves on a given branchlet ovate, obtuse, 1.5–3 cm. long; the next higher or median leaves oval or elliptic-oval or somewhat obovate, obtuse to acute, 5–7 cm. long by 2.5–3 cm. wide; the remainder or normal leaves lanceolate to broadly lanceolate, acuminate, and 5–12 cm. long by 2.5–4 cm. wide or, on vigorous shoots (*Harper 1381*), broadly lanceolate and acuminate, 12–16 cm. long and 4–5 cm. wide, or the largest broadly elliptic and acute, 17–18 cm. long and 6 cm. wide, on puberulent petioles up to 2.5 or 3 cm. long; all leaves rounded to truncate to somewhat cordate at base, glandular-crenate-serrulate on the margins (serrulations averaging 3.5 to 7 per cm. on smaller and 2.5–4 per cm. on larger leaves), sometimes with small lobes near the base of the blade (as in *S. pseudomonticola* Ball) or with solitary glands or isolated pieces of glandular foliaceous tissue (remnants of once basal lobes) 0.5–1.5 mm. long, on the sides of the petiole 3–7 mm. below the blade and in its plane; usually densely pubescent while unfolding, becoming progressively glabrescent to glabrate with age; the yellowish midribs prominent beneath and usually remaining finely pubescent above, especially toward the base; glaucous beneath, becoming dark green above in age, the greenish yellow secondaries and tertiaries forming a coarse raised network on both surfaces as in *S. discolor* but never forming the fine flat mosaic of vein-islets so characteristic of *S. longipes*, *S. amygdaloides*, *S. nigra*, and related species.

Aments coetaneous, leafy-pedunculate, 3.5–6 cm. long, 1.5 cm. wide in flower, the pistillate 2–2.5 cm. wide in fruit; peduncles 0.5–1 cm. long, pubescent, bearing 1–3 small leaves 1–3 cm. long; flower-scales oblong-obovate, about 2 mm. long, yellowish to yellowish brown, rounded or sometimes truncate at apex, glabrate outside except on margin and base, densely villose inside; stamens 3 or 4 to 6 (sometimes only 2), filaments 5–7 mm. long, sparsely pilose at base; capsules ovate-lanceolate, 5–8 mm. long, glabrous, brown at maturity, the style 0.1–0.2 mm. long, bifid, the stigmas very short, the pedicel 2–4 mm. long, sparsely pilose, becoming glabrate; gland 1, ventral, 0.6–1 mm. long, stout, cylindrical.

Salix floridana has lanceolate to ovate-lanceolate or broadly elliptic leaves with coarse venation, while the leaves of *S. longipes* are linear-lanceolate to narrowly lanceolate and with a very fine mosaic of vein-islets. The capsules of *S. floridana* are larger, the stamens fewer, and the flower-scales more glabrate. It is not certain that *S. floridana* is most nearly akin to *S. longipes* and other members of the Section *Bonplandianae*. It probably belongs to the Section *Triandrae*, represented by *S. triandra* L. of Eurasia and other species.

In any case, *S. floridana* is a species apparently on the verge of extinction. The type locality (per Gray Herbarium isotype) is Marianna, Jackson Co., northern Florida. It has been found once in each of two counties in southern Georgia, and in two counties of central Florida. Dr. Harper says the Pulaski County location probably has been destroyed. The species is relatively rare, if existent, at the other localities mentioned.

EXPLANATION OF PLATE

Salix floridana Chapman; isotype in Gray Herbarium.

U. S. DEPARTMENT OF AGRICULTURE,
WASHINGTON, D. C.